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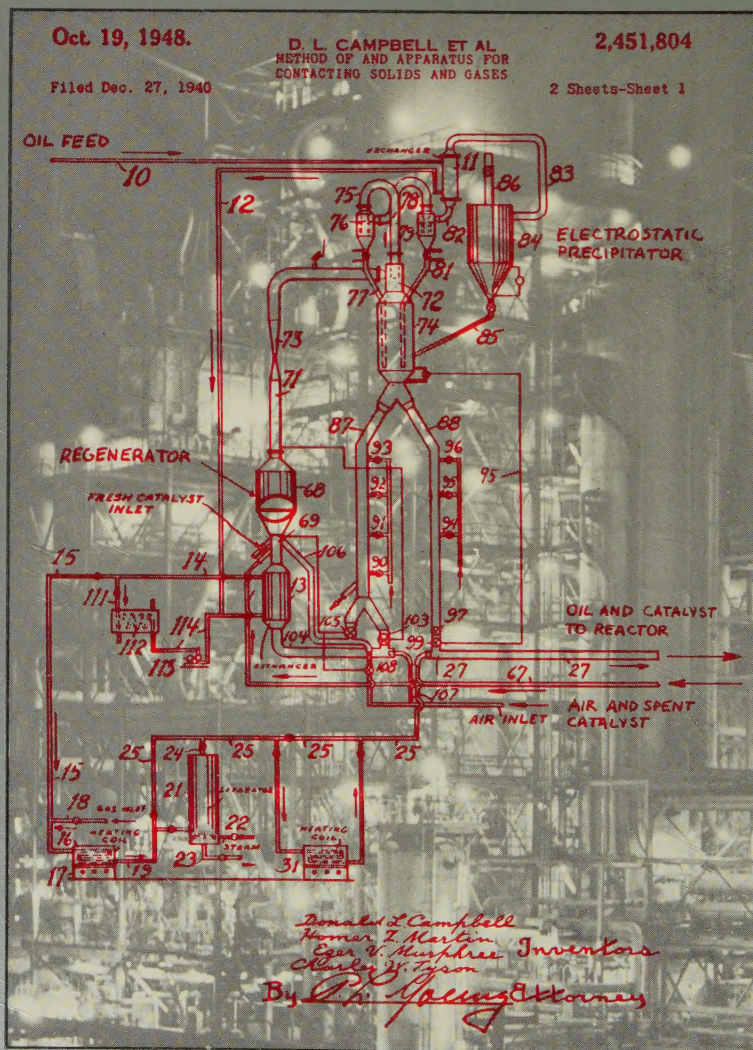
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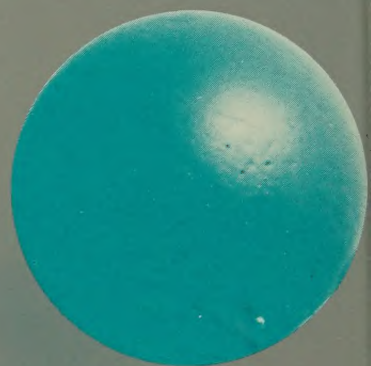
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CHEMTTECH

The Innovator's Magazine JUNE 1984



**How to start your own business
... and fail**

392

☐

When **Merrill** described his business in these pages, it looked so good. It wasn't. Why?

**Risk assessment: How it's done
and how it might be**

394

☐

All research begins by imagining something that's never happened. But as **Rodricks** and **Tardiff** show, the going gets rough when decisions require us to assume that "something" without proof.

Me? An expert witness?

398

☐

It could happen. **Young**, with real cases, tells what to do when it does.

**The responsibilities of the
technologist**

406

☐

In concluding their series, **Mingle** and **Reagan** reiterate that no clear-cut line exists between where one's legal responsibility ends and moral responsibility continues.

Running a basic research group

414

☐

"Basic research is research that will have a favorable impact on corporate earnings 5-10 years in the future": **Hoy**.

**Academic research and the
practice of chemical engineering**

418

☐

Why it's difficult to delineate what separates the chemist's responsibilities from those of the engineer is illustrated by **Rowe's** analysis of the cutting edge. Whose? Read on.

**Composite interfaces:
Myths, mechanisms, and
modifications**

430

☐

Two things make up one thing only when the two things stick together. **Kardos** illustrates how it's done.

**Immobilized phase-transfer
catalysts**

436

☐

Can you have an interphase messenger that's a solid? **Ford** thinks so.

It's raining nitrates and sulfates

440

☐

Here's a controversial view by **Innes**.

385 The Industrial Chymist☐

wants us to ask "why?" before we get to "How much?"

386 Write On☐

in which readers are admonished to be more scientific on emotional issues.

387 Heart Cut☐

in which **Kreps** and **Bisio** tell us about educational wallpaper, gelled deicers and supercomputers.

390 View from the Top☐

in which **Harris** shows how to convert a carpet cleaning failure to a commercial shaving aid.

426 P.S.☐

calls attention to the law of impact.

427 Chemistry Plus☐

in which we will solve the exciting problems.

OBC The Last Word☐

in which **Doane** describes her old-time medicine chest, stocked naturally.

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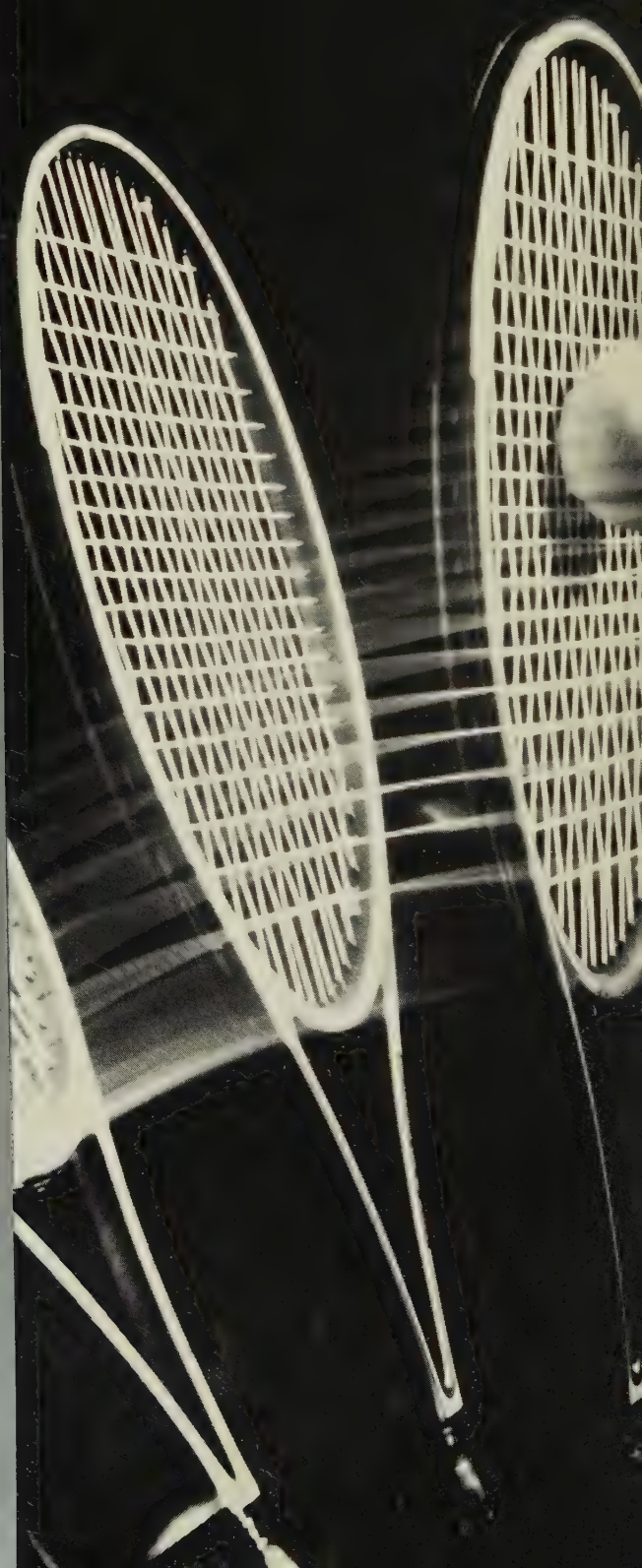
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CHEMTECH

The Innovator's Magazine JULY 1984



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OSHA in the laboratory

458



The witches of Macbeth would never pass the safety muster of **Marlowe's** play, prepared for your next safety meeting.

Two theories of learning:
In one we believe, the other we use

462



"To name it is not enough to know it," says **Renner**, who decries the sterility of mere classification and analysis in educating.

Government's impact on innovation:
A congressional perspective

468



What roles should government play in influencing innovation? For answers we asked congressional staffer **Flajser** to outline what happens "on the Hill."

What it takes to move up

473



Here are some career considerations (not found in textbooks) from **Goldberg**, like how to be a "good" politician.

Diagnose before you damn

477



Proving causality, much less correlation, is science's toughest job. **Hajdu** illustrates by examining the difficulty of diagnosing the cases of the cancer that have been blamed on dioxin. His concern is with long-term psychological effects of misdiagnosis.

The biotechnology dilemma

482



"Who is to determine, and how, the uses of the new techniques of biotechnology?" asks **Murray**.

Renewable energy

486



Rumors of the death of sunshine's uses are greatly exaggerated. **Klass** shows why, and how they're very much alive.

Development of modern
polymer theory

492



Who provided the scientific underpinnings of that ubiquitous and growing branch of chemistry, plastics? **Stahl's** answer provides insights into future growths.

High-temperature adhesives

496



More and more the best way of fastening things together is sticking them together. **Hergenrother** leads us through the chemical technology of adhesives designed for the most demanding applications.

Ethylene glycol from syngas

504



Now here's an interesting possibility devised by **Kollar**, an independent inventor.

449 The Industrial Chymist



reports on his activities for an atypical month, the one in which he hired **Amy Yanagi**, CHEMTECH's new associate editor.

451 Write On



in which we learn today's jojoba price and a reader asks whether our Last Word is for real.

453 Heart Cut



in which **Kreps** and **Thyagarajan** launder molecules, describe how to keep dirty places clean, and tell where to get polymers for school labs.

455 View from the Top



in which **Mahoney** says about the Agent Orange settlement, "... the right thing to do is [often] different from being right."

456 Guest Editorial



in which **Shapiro** provides a humanistic/theological interpretation of "dominion over all the earth."

OBC The Last Word



in which your career temperature is taken.

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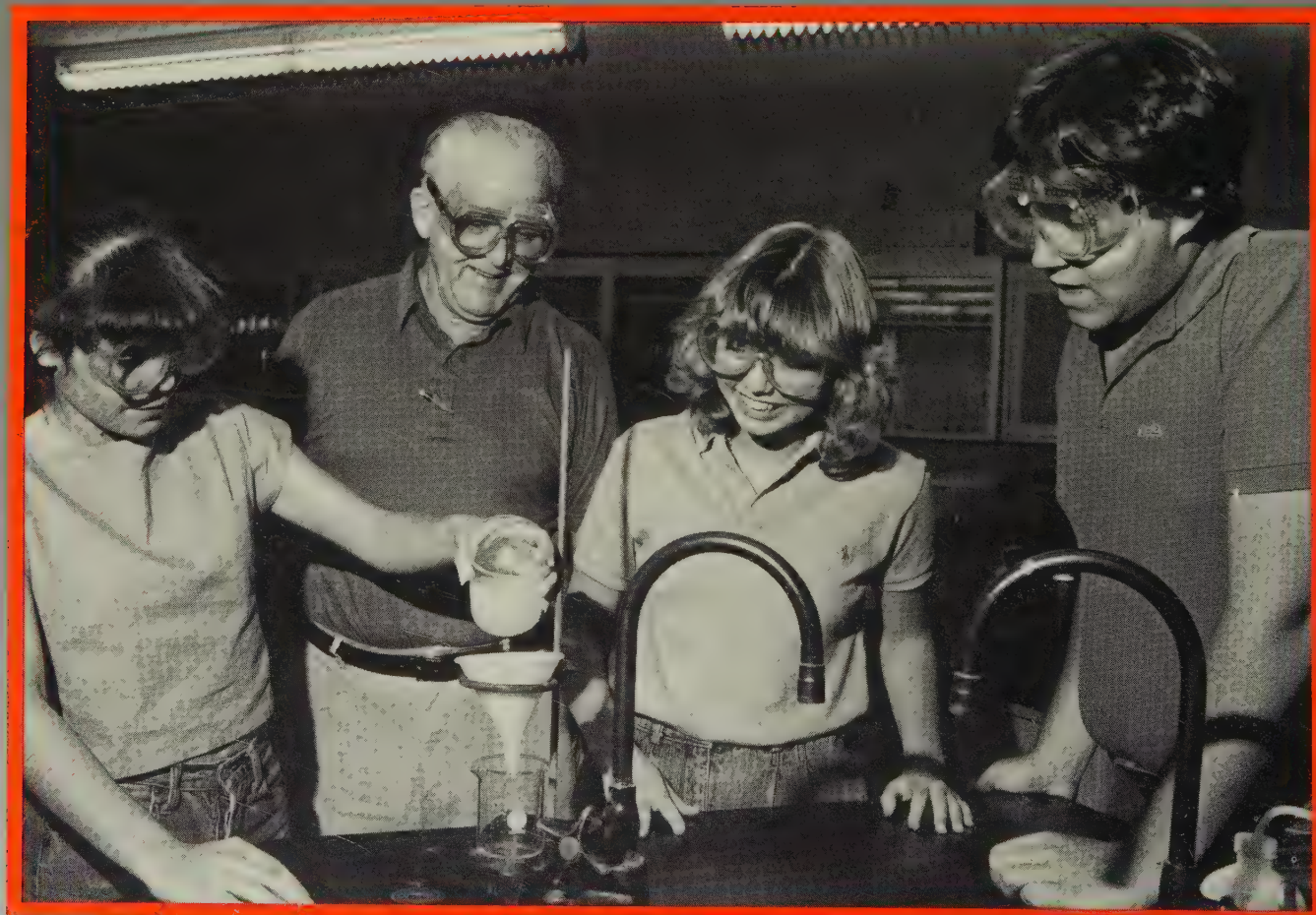
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CHEMTECH

The Innovator's Magazine AUGUST 1984



Listen, please!

- 584** ☐ Women executives share their perceptions of the world of work with **McLane**.

Tough enough to grow

- 587** ☐ Whether the story of Arapahoe Chemical Co., as told by **Waugh**, one of its founders, is typical or atypical of smaller firms, it's fascinating.

**Licensing:
A primer for innovators**

- 590** ☐ There's a high probability that what you invent will never be used . . . unless you license its use. **Smith** shows how it's done.

**Industry-university
cooperation in action**

- 600** ☐ The operation of the catalysis center at the University of Delaware—described by **Gat**—is a bellwether for all sorts of other relationships between academe and industry.

**Batch or continuous processing:
A case history**

- 607** ☐ Here, thanks to **Gonzalez** and **Larder**, is the checklist you need to make that decisive scale-up decision.

Renewable energy

- 610** ☐ Biomass isn't the only renewable energy source. Here **Klass** evaluates the others.

The toughest tile job ever

- 616** ☐ Protecting the space shuttle from thermal damage on reentry challenged every bit of materials technology known and some unknown. **Dotts**, **Curry**, and **Tillian** detail how the challenge was met.

Exciting CH bonds

- 628** ☐ There have to be better ways to cause methane and other paraffins to react, and Du Pont chemists have been trying for a long time to find them. **Parshall** relates what they've been doing.

577 The Industrial Chymist

- ☐ Tick, tick, tick.

578 Write On

- ☐ more on Agent Orange and some missing type reappears.

579 Heart Cut

- ☐ in which **Roberts** and **Thyagarajan** are this month's idea generators.

582 View from the Top

- ☐ in which **Moore** looks at the national deficit from different angles.

597 Chemistry Plus

- ☐ in which **Szman** concludes his series with a few tables worth clipping.

OBC The Last Word

- ☐ guides you to do as Romans do in Rome.

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CHEMTECH

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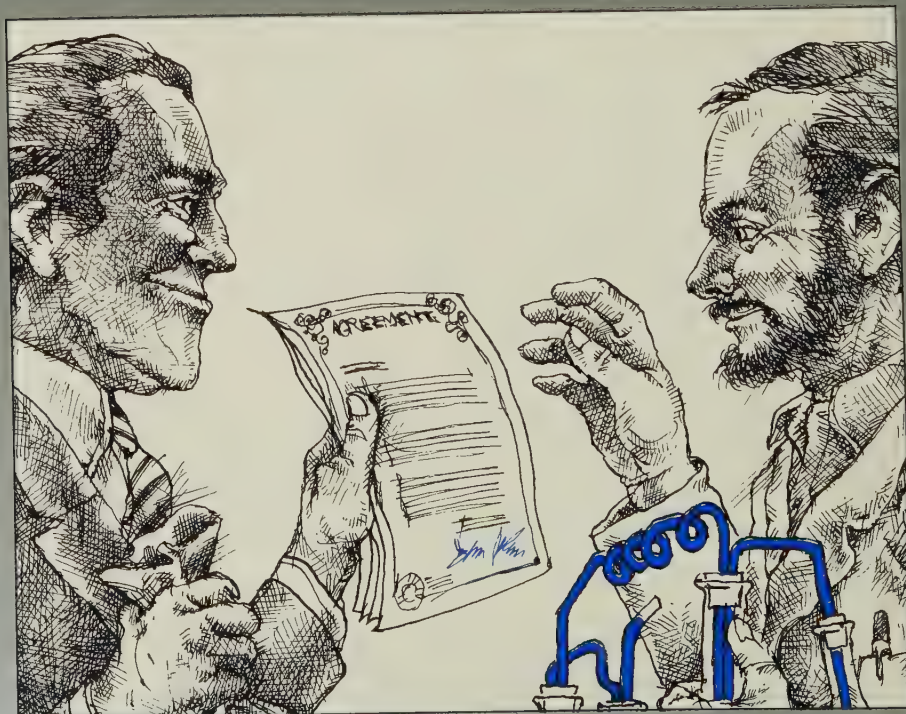
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CHEMTECH

The innovator's Magazine OCTOBER 1984



Opportunity knocks more than once

646



Here's **Salsbury's** retirement story. It not only illustrates the concept of "retirement to" but also illustrates a relationship between industry and academe that works.

The new humanities

650



The truly educated person today needs engineering more than he needs Latin, economics more than she needs Greek, says poet **Gratch**.

Invention, imitation, and
(especially) innovation in Japan

652



When one of the top scientific and technical writers, working on one of the top magazines in the world, looks at Japan, it pays to look with him. Here are views of the late **Richard Casement** of the *Economist*

Plutonium, power, and people

660



Is Pu the limiting factor in nuclear power? Here's **Comar's** attempt to answer.

From federal grants
to business profit

667



Government-funded patents are now *real* patents. **Sundeen** and **Morrison** show how to benefit from them.

Isocyanate without phosgene

670



As auto bodies use more polyurethanes, the old route to isocyanates becomes ever more onerous. Here's a new route to MDI by **Fukuoka, Chono, and Kohno**.

Particle analysis → Bulk analysis

678



There's lots of portent in the analytical techniques developed to relate properties of individual particles from the atmosphere to bulk materials. **Johnson** and co-workers describe the methodology.

Fuel cells: Principles and prospects

684



The beauty of generating electricity via the "combustion" that happens in a fuel cell is that it's free of Carnot-type thermodynamic limitations. **Prentice** outlines where we are in exploiting this advantage.

Linear free energy relationships:
A historical perspective

698



Here's a chance to appreciate, from the beginning, development of one of chemistry's most beautiful and useful empirical correlations. It's presented by **Grunwald**.

641 The Industrial Chymist



wonders how Americans are going to handle the environmental problem that's been placed in their laps.

642 Heart Cut



features a gift suggestion of applied chem plus idea generation selected by **Piccolini and Allen**.

644 View from the Top



in which **Cusumano**—whose venture just raised \$22 million—talks about entrepreneurship.

664 Poetry



in which **Lord Byron** presages the nuclear winter.

696 Random Samplings



in which **Hahn** shows how to estimate overall error from error measurements from component values.

OBC The Last Word



in which **Taniuchi** reveals the creativity that's possible within the constraints of our alphabet.

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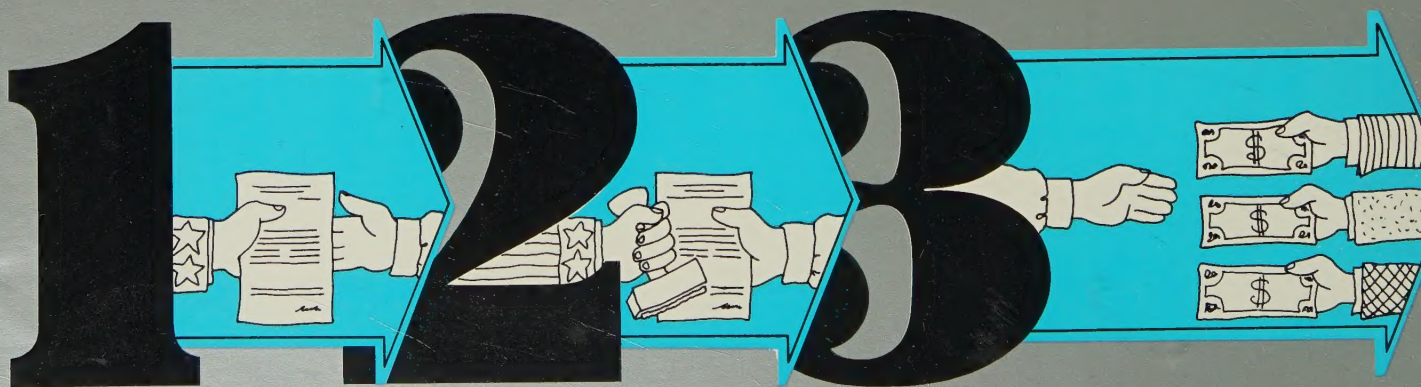
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CHEMTECH

The Innovator's Magazine

NOVEMBER 1984



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CHEMTECH

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